Extending and implementing the Persistent ID pillars

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The recent double decade anniversary of scholarly persistent identifier use has triggered journal special editions such as "20 Years of Persistent Identifiers". For such a publication, it is apt to consider the longevity of some persistent identifier (PID) mechanisms (Digital Object Identifiers) and the partial disappearance of others (Life Sciences IDs). We have previously postulated a set of "PID Pillars" [1] which are design principles aimed at ensuring PIDs can survive technology and social change and thus persist for the long term that we have drawn from our observations of PIDs at work over many years. The principles: describe how to ensure identifiers' system and organisation independence; codify the delivery of essential PID system functions; mandate a separation of PID functions from data delivery mechanisms; and require generation of policies detailing how change is handled.

In this presentation, first we extend on our previous work of introducing the pillars by refining their descriptions, giving specific suggestions for each and presenting some work that addresses them. Second, we propose a baseline data model for persistent identifiers that, if used, would assist the separation of PID metadata and PID system functioning. This would allow PID system function specifics to change over time (e.g. resolver services or even resolution protocols) and yet preserve the PIDs themselves. Third, we detail our existing PID system — the PID Service [2] — that partially implements the pillars and describe both its successes and shortcomings. Finally, we describe our planned next-generation system that will aim to use the baseline data model and fully implement the pillars.